

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing:

15 March 2001 (15.03.01)

International application No.:

PCT/US99/20183

Applicant's or agent's file reference:

AA420F/JH

International filing date:

03 September 1999 (03.09.99)

Priority date:

Applicant:

YANG, Jian-Zhong et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International preliminary Examining Authority on:

15 December 2000 (15.12.00)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was



was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer:

J. Zahra

Telephone No.: (41-22) 338.83.38

REC'D 11 DEC 2001

WIPO PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference AA420F/JH	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/20183	International filing date (day/month/year) 03/09/1999	Priority date (day/month/year) 03/09/1999
International Patent Classification (IPC) or national classification and IPC A61K7/06		
Applicant THE PROCTER & GAMBLE COMPANY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  15/12/2000	Date of completion of this report  07.12.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Miller, B  Telephone No. +49 89 2399 8540  

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US99/20183

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-44 as originally filed

**Claims, No.:**

1-8 with telefax of 03/09/2001

**Drawings, sheets:**

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US99/20183

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes: Claims 1-8
	No: Claims
Inventive step (IS)	Yes: Claims 7
	No: Claims 1-6, 8
Industrial applicability (IA)	Yes: Claims 1-8
	No: Claims

2. Citations and explanations  
see separate sheet

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Novelty (Article 33(2) PCT)**

- 1.1. Document **WO-A-94/08555** (D1), which is regarded as the closest prior art, discloses a skin or hair care composition in the form of a clear, aqueous gel or lotion comprising an alkoxylated, nonionic surfactant, said alkoxylated nonionic surfactant having a weight average HLB value of **at least about 12** (claim 1). The compositions are substantially free of materials which are insoluble or not colloidally-soluble in distilled water at 20°C, such as fatty alcohols (page 13, first paragraph).

The subject-matter of present claim 1, 7 and 8 differs from this composition in that the gel matrix contains a solid fatty compound, a cationic surfactant is chosen as hydrophilic gelling agent and in that the alkyl ethoxylate has a defined average molecular weight of less than 500 g/mol and has a HLB value from 6-11.

The subject-matter of claims 1, 7 and 8 is thus novel.

- 1.2. Claims 2-6 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty.

**2. Inventive Step (Article 33(3) PCT)**

- 2.1. The problem to be solved by the present invention may therefore be regarded as providing a hair care composition which effectively deposits onto hair to noticeably reduce flyaway hair volume and total hair volume thereby providing smooth, soft, silky-feeling, and healthy-looking hair (pages 1-2).

Document D1, which is considered to represent the most relevant state of the art, does neither indicate nor teach the solution to this problem as proposed in present claim 7 (using a alkyl ethoxylate having a specific HLB value, molecular weight in a defined amount).

- 2.2. The solution proposed in claim 1 of the present application, however, cannot be considered as involving an inventive step (Article 33(3) PCT).

If the man skilled in the art, by the mere reading of the composition of the hair care composition as defined in present claim 1, is able to conclude on the basis of his knowledge in the field (the so-called "common general technical knowledge") that all possible alkyl ethoxylates in any amount (e.g. 0.0000001 % or 99 %) in combination with any gel matrix in any amount are definitely a solution to the problem identified, then that same technical knowledge would have prompted him to solve the problem faced by the Applicant with said same composition of the hair care composition as defined in present claim 1, without the exercise of any inventive skill.

If the skilled reader is not prompted by his technical knowledge to use any alkyl ethoxylate in any amount according to present claim 1 to solve the problem faced by the applicant, then he cannot conclude that all possible compositions of the hair care composition as defined in present claim 1 are definitely the solution of said problem. Therefore the whole area claimed would not lead to the desired effects. The claimed subject-matter thus would lack an inventive step, contrary to Article 33(3) PCT. Additionally, the claimed subject-matter would thus seem much broader than justified by the description, contrary to Article 6 PCT (see additionally item VIII, 1).

- 2.3. Dependent claims 2-6 and independent claim 8 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to inventive step. The described features come within the scope of the customary practice followed by the man skilled in the art, especially as the advantages thus achieved can be readily contemplated in advance. Furthermore the application is devoid of any further unexpected advantages or surprising effects due to the features mentioned in dependent claims 2-6. Therefore claims 2-6 and 8 lack an inventive step, contrary to Article 33(3) PCT.

**3. Industrial Applicability (Article 33(4) PCT)**

The subject-matter of the present application fulfills the requirements of Article 33(4) PCT, since the claimed compositions can be applied as hair care compositions.

**Item VIII**

**Certain observations on the international application**

The following observations on the clarity of the claims and description or on the question whether the claims are fully supported by the description are made:

1. It is clear from the description that the following features are essential to the definition of the invention in order to achieve the desired effects:

The present invention comprises

- a) "from 60-99 %, by weight of the hair care composition, of a gel matrix" (page 6, lines 30-31)
- b) an oil having an HLB value of from 0 to 3 (page 15, lines 6-17).

Since independent claim 1 does not contain these features it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

2. Claims 1-3 and 5-6 are not supported by the description as required by Article 6 PCT, as their scope is broader than justified by the description and drawings, see Item V.
3. Claims 2 and 7 do not meet the requirements of Article 6 PCT (see also Guidelines, III-4.7) in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem ("reduces bulk hair volume by ..."). The technical features necessary for achieving this result are missing from the wording of said claims.
4. The terms "according to an Image Analysis Protocol", "solid fatty compound" and "gel matrix" used in claims 1,2,3,7 and 8 are vague and unclear and leave the reader in doubt as to the meaning of the technical features to which they refer, thereby rendering the definition of the subject-matter of said claims unclear (Article 6 PCT, see also Guidelines, III-4.7a).

5. The vague and imprecise term "**about**" in claims 1-8 and throughout the description, implies that the subject-matter for which protection is sought is not clearly defined (since R and n are about 1, does this include 0?), thereby resulting in lack of clarity (Article 6 PCT, see also the PCT Guidelines, PCT/GL/3 III, 4.5a).



## WHAT IS CLAIMED IS:

1. A hair care composition comprising:
  - A. an alkyl ethoxylate of the formula:  
$$\text{R-O-(C}_2\text{H}_4\text{O)}_n\text{H,}$$
wherein R is an alkyl group having from about 1 to about 30 carbon atoms, wherein n is from about 1 to about 10, wherein the weight average molecular weight of the alkyl ethoxylate is less than about 500 g/mol, and wherein the HLB value of the alkyl ethoxylate is from about 5 to about 12; and
  - B. a gel matrix comprising a cationic surfactant, a solid fatty compound, and water.
2. The hair care composition of Claim 1, wherein the composition reduces bulk hair volume by at least about 10%, according to an Image Analysis Protocol.
3. The hair care composition of Claim 1, wherein the weight ratio of the cationic surfactant to the solid fatty compound is from about 1:1 to about 1:20.
4. The hair care composition of Claim 1, wherein the alkyl ethoxylate is present at a level from about 0.1% to about 20%, by weight of the hair care composition.
5. The hair conditioning composition of Claim 1, further comprising an oil having an HLB value of from about 0 to about 3.
6. The hair care composition of Claim 1, wherein the alkyl ethoxylate has a cloud point of less than about 50 °C.
7. A hair care composition comprising, by weight of the hair care composition:
  - A. from about 0.1% to about 20% of an alkyl ethoxylate of the formula:  
$$\text{R-O-(C}_2\text{H}_4\text{O)}_n\text{H,}$$
wherein R is an alkyl group having from about 1 to about 30 carbon atoms, wherein n is from about 1 to about 10, wherein the weight average molecular weight of the alkyl ethoxylate is less than about 500 g/mol, and wherein the HLB value of the alkyl ethoxylate is from about 5 to about 12;
  - B. from about 0.5% to about 20% of an oil having an HLB value of less than about 3;

- 15 C. from about 60% to about 99% of a gel matrix comprising:  
i. a cationic surfactant;  
ii. a solid fatty compound; and  
iii. water,  
wherein the gel matrix has a viscosity of from about 5,000 cps to about 40,000 cps, and wherein the weight ratio of cationic surfactant to solid fatty compound is from about 1:1 to about 1:20; and
- 20 D. the balance being other additional components,  
wherein the alkyl ethoxylate is entrapped within the oil, and wherein the hair conditioning composition reduces bulk hair volume by at least about 10%, according to an Image Analysis Protocol.
8. A process for forming a hair care composition comprising the steps of:  
A. providing an alkyl ethoxylate of the formula:  
$$\text{R-O-(C}_2\text{H}_4\text{O)}_n\text{H,}$$
  
wherein R is an alkyl group having from about 1 to about 30 carbon atoms, wherein n is from about 1 to about 10, wherein the weight average molecular weight of the alkyl ethoxylate is less than about 500 g/mol, and wherein the HLB value of the alkyl ethoxylate is from about 5 to about 12;
- 5 B. forming a gel matrix by  
10 i. providing a cationic surfactant;  
ii. providing a solid fatty compound; and  
iii. forming the gel matrix by mixing the cationic surfactant and the solid fatty compound at a temperature greater than both their respective melting points,  
15 wherein the weight ratio of cationic surfactant to solid fatty compound is from about 1:1 to about 1:20; and  
C. forming a hair care composition by combining the alkyl ethoxylate with the gel matrix.

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>AA420F/JH</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 99/ 20183</b>	International filing date (day/month/year) <b>03/09/1999</b>	(Earliest) Priority Date (day/month/year)
Applicant  <b>THE PROCTER &amp; GAMBLE COMPANY et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

**4. With regard to the title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

**5. With regard to the abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. The figure of the drawings to be published with the abstract is Figure No.**

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

P 99/20183

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 A61K7/06

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal WPI PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 94 08555 A (PROCTER & GAMBLE ; PARNELL BRIDGET ANNE (GB); BRIGGS GILLIAN SCOTT) 28 April 1994 (1994-04-28) ----	
A	WO 95 20939 A (PROCTER & GAMBLE) 10 August 1995 (1995-08-10) ----	
A	DE 196 29 951 A (BEIERSDORF AG) 29 January 1998 (1998-01-29) ----	
A	EP 0 312 995 A (KAO CORP) 26 April 1989 (1989-04-26) -----	

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

25 May 2000

Date of mailing of the international search report

02/06/2000

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/20183

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9408555	A	28-04-1994	AU 5402494	A	09-05-1994
			CA 2146756	A	28-04-1994
WO 9520939	A	10-08-1995	AU 1606995	A	21-08-1995
			EP 0743846	A	27-11-1996
			US 5997851	A	07-12-1999
DE 19629951	A	29-01-1998	DE 19509079	A	19-09-1996
			EP 0820758	A	28-01-1998
			WO 9628131	A	19-09-1996
			WO 9628132	A	19-09-1996
			EP 0814752	A	07-01-1998
			EP 0814753	A	07-01-1998
			JP 11501641	T	09-02-1999
			JP 11501645	T	09-02-1999
EP 0312995	A	26-04-1989	JP 1106812	A	24-04-1989
			JP 1960663	C	10-08-1995
			JP 6096500	B	30-11-1994
			AT 79019	T	15-08-1992
			DE 3873474	A	10-09-1992
			PH 25169	A	27-03-1991

WO 01/17490 A1



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

Int. Application No

US 99/20183

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61K7/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal WPI PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	WO 94 08555 A (PROCTER & GAMBLE ; PARNELL BRIDGET ANNE (GB); BRIGGS GILLIAN SCOTT) 28 April 1994 (1994-04-28)	
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- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

25 May 2000

Date of mailing of the international search report

02/06/2000

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/20183

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9408555	A	28-04-1994	AU 5402494 A CA 2146756 A	09-05-1994 28-04-1994
WO 9520939	A	10-08-1995	AU 1606995 A EP 0743846 A US 5997851 A	21-08-1995 27-11-1996 07-12-1999
DE 19629951	A	29-01-1998	DE 19509079 A EP 0820758 A WO 9628131 A WO 9628132 A EP 0814752 A EP 0814753 A JP 11501641 T JP 11501645 T	19-09-1996 28-01-1998 19-09-1996 19-09-1996 07-01-1998 07-01-1998 09-02-1999 09-02-1999
EP 0312995	A	26-04-1989	JP 1106812 A JP 1960663 C JP 6096500 B AT 79019 T DE 3873474 A PH 25169 A	24-04-1989 10-08-1995 30-11-1994 15-08-1992 10-09-1992 27-03-1991